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PREDICT EPHEMERAL AND PERENNIAL RANGE QUANTITY AND QUALITY DURING NORMAL GRAZING SEASON

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Type I Progress Report for Period 1 September 1972 - 31 October 1972

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(E72-10269) PREDICT EPHEMERAL AND PERENNIAL RANGE QUANTITY AND QUALITY DURING NORMAL GRAZING SEASON Progress G. Bentley (Bureau of Land Management, Riverside, Calif.) 27 Nov. 1972 4 p CSCL 08M G3/13 Unclas 00269

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Type I Progress Report
ERTS-A

a. Title: Predict Ephemeral & Perennial Range Quantity & Quality During Normal Grazing Season

ERTS-A Proposal No.: MMC # 147

b. GSFC ID No. of P.I.: IN 417

c. Statement and explanation of any problems that are impeding the progress of the investigation: In my original data request to NASA I requested 70 mm & 242 mm positive transparencies and 9.5" x 9.5" color composites. I did so not knowing just what data would be most useful to me, but knowing that I could stop further shipment of data I found to be of no use to me. I tentatively planned to process the 70 mm data using color additive viewing equipment such as that available to USGS in Denver or U of A Arid Lands Studies in Tucson. The 242 mm positive transparencies could be placed on a light table and analyzed directly. Color composites could be sent to my field people and viewed directly by them and myself. I have received only 70 mm positive transparencies, the first received on October 9, thus missing much of the growing season on my sites.

I have had some difficulty in getting 70 mm imagery analyzed using equipment most available to me. I waited until early November until I had received sufficient data from NASA to make a trip to Tucson feasible. I spoke to the Arid Lands Studies staff and explained that I was attending their conference on remote sensing November 8-10 and would also like to spend time analyzing my data. They indicated their I^2S viewer would probably be available. It was not, however, as it was on display the entire period. I returned on November 15, using the I^2S and a densitometer to analyze all ERTS data in my possession as well as some data they had which I did not. The results of the densitometer are questionable as it was in need of calibration.

Imagery received thus far from NASA is of questionable value for analysis of annual and perennial forage in arid regions. Positive transparencies appear to be washed out. Differences in density of various sites have been shown to be very low, especially in the valleys. Imagery taken later in the season (fall vs. summer) is somewhat improved but this may be due to increased sun angle.

I have requested additional data from NASA via the ERTS Data Request Form 560-213 (7/72) but have not received anything.

I have been informed by my Technical Monitor that my request for imagery on my Alaska site was not plugged into the computer and this is why I have received no data for Alaska. He told me this would be rectified. I have requested Alaska data but have seen nothing as yet.

d. Discussion of the accomplishments during the reporting period and those planned for the next reporting period: Progress is being made. I have covered all gaps in data requested from NASA with subsequent Standing Order Forms. I have analyzed several different types of density slicing equipment (densitometers) and found that they are of limited value considering the quality of imagery I am receiving. I inquired into costs of data enhancement by several private contractors in the Los Angeles area and found them to be prohibitive and quality of products questionable.

Although the satellite was not launched until after the normal growing season of my sites and the incidence of a severe drought in the southwest I have evolved techniques for collection of ground truth data which compliment broad coverage and lack of detail found on satellite data.

I am in the process of using or developing techniques and equipment for the following enhancement procedures:

1. I^2S viewer for enhancement and a Nikon camera and close-up lens for recording data.

2. Diazo process of producing color composites from 242 mm positive transparencies.

3. Color composite from 70 mm positive transparencies using a camera capable of triple exposure and a variety of filters.

e. Discussion of significant scientific results and their relationship to practical applications or operational problems including estimates of the cost benefits of any significant results: None at present.

f. A listing of published articles, and/or papers, pre-prints, in-house reports, abstracts of talks, that were released during the reporting period: None

g. Recommendation concerning practical changes in operations, additional investigative effort, correlation of effort and/or results as related to a maximum utilization of the ERTS system: I have asked NASA to explain why imagery taken over arid regions is washed out, as well as some indication of possible ways of either improving data or my ability to enhance imagery.

I would hope that ERTS-1 will continue to produce data through August 1973 and longer if possible so that we may get seasonal patterns and hopefully monitor changes from fall of 1972 through fall of 1973.

h. A listing by date of any changes in Standing Order Forms:

10-12-72 Requesting an increase in season of coverage (late launch) and amount of cloud cover acceptable.

10-31-72 Requesting black and white paper prints in 2 bands.

11-7-72 Included California sites.

11-13-72 Asked for 242 mm positive transparencies - I am receiving none.

i. ERTS Image Descriptor forms: None

j. Listing by date of any changed Data Request forms submitted to Goddard Space Flight Center/NDPF during the reporting period: No changed Data Request Forms were submitted. However, I did submit several DR forms for data I need but am not receiving. These areas follow:

10-12-72 Data found in Standard Catalog which appeared to be useful, B/W and color.

10-31-72 B&W prints and color composites of data I received as 70 mm positive transparencies.

11-7-72 Data found in Standard Catalog which appeared to be useful.

k. Status of Data Collection Platforms (if applicable): N/A

cc:
WO, 420

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